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ABSTRACT

This student guide is intended to assist persons employed as supervisors in improving their ability to control output. Discussed in the first three sections are the following topics: the control process (stages in control, control and planning, the supervisor and control, and ways of choosing areas to control); ways of controlling output (general and specific techniques for controlling work flow, materials, quality, plant and equipment, and work methods); and the workteam and control (motivation and training and development). Each of these sections contains an introduction, sections of instructional text that are interspersed with reinforcing learning activities, and a section summary. The fourth part of the guide includes a series of performance checks (an end check, a tutor check, and a work-based project). A unit review, which also includes a description of related extension courses and resources, concludes the guide. (MN)

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An Open Tech Project

SUPERVISING

TECHNICAL ASPECTS OF SUPERVISION

37: Controlling Output

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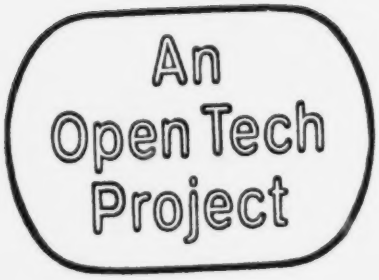
37: CONTROLLING OUTPUT

Vas Prabhu



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Vas Prabhu
Controlling Output (Number 37 in the CHOICE SERIES of learning units)

Series Editor: Harry V Pardue
Northern Regional Management Centre.

WORKING GUIDE TO THIS UNIT IN YOUR DEVELOPMENT PROGRAMME

This Unit is now your personal property - it's not for handing back to your training officer or to a tutor. It is your working book.

The Contents will increase in value to you each time you write on one of its pages. This is a working text for your personal notes - without notes its value is limited.

Qualifications forget about certificates and diplomas - you don't need them for this programme. What you do need is the wish:-

* to do your job better
* for personal development

Your study time is really up to you - we guess you will need about 8 hours in total. But it's your time - spend as long as you like.

How am I doing? you can judge for yourself by checking out how well you cope with the tasks we call Activities and Self Checks which occur throughout the unit. You can also get the Tutor Check and/or the Work Based Project to your tutor for an unbiased view of your progress.

Work Pace it's really up to you and depends on your interest. However, if you do well on the Activities and Self Checks, you could afford to speed up a little. Of course, if you don't do as well as you expect then you could slow down a little or flick back into the unit for a quick review of the more difficult ideas.

When in doubt - ask or seek help from:

* your family and friends
* colleagues at work
* your company training staff
* other open learners
* your tutor, by phone, by a visit to your support centre or by dropping your tutor a line through the post.

Don't worry if what you learn doesn't seem to be of use to you now, remember that times change - it may be useful one day. Anyway, just knowing more improves personal confidence.

So now make a start:-

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37: CONTROLLING OUTPUT by Vas Prabhu

ABOUT THIS UNIT

Whatever our job we all have some kind of output, whether it is the number of items produced, the number of patients treated, the number of letters typed or the number of seedlings planted out. To achieve that output we will use the effort of the workteam, materials and equipment in certain ways. It is only by setting standards for the use of each of these resources and by measuring how we come up to those standards that we can have any clear picture of what is happening in the workplace and any hope of controlling activity.

Standards are not something remote which are imposed on us by somebody else. Standards need to be clear, measurable and very practical if they are to be of real use to you and your workteam and, as a supervisor, you are in a key position to make sure that they are.

Although obviously some standards are highly technical, many more are very down-to-earth and will seem like applied common sense. Maintaining output control is a question of applying a simple but systematic approach to every aspect of the work done in your work area.

IN THIS UNIT WE WILL:

* examine the stages of the control process
* see how you, as a supervisor, can select areas to control
* examine some techniques which you could use to improve your output control
* consider the importance of your workteam in output control.

AUDIO TAPE Side 1

Before you continue through the unit, you should listen to side 1 of the audio tape that accompanies the unit. You will find it useful if you refer tothe unit objectives shown below whilst you listen to the tape. You may wish to make the objectives clearer to yourself by making a note or two on the page as you listen.

OBJECTIVES

When you have worked through this unit you will be BETTER ABLE to:

* apply the control process to any work situation
* identify the key areas of control in your work area
* use some basic techniques for controlling output
* recognise the importance of including the workteam in your control systems.

PART A THE CONTROL PROCESS

1 Introduction

As a supervisor you'll often find that you are responsible for making sure that what management has planned actually happens. The success of the workplace can depend on your ability to deliver work on time and at the right price.

It demands that you continually watch what is going on, make decisions about the flow of work and take corrective action whenever you see the possibility of something going wrong.

Perhaps you feel you do all this already. What we'll be looking at in this unit is simply some guidelines and techniques which will help you carry out this responsibility in a more effective and systematic way, whatever kind of industry you work in.

2 The Control Process

We are all involved in a complex control process every minute of our working lives.

Here are three activities which we might possibly do without giving them a lot of conscious thought but which require continual monitoring of all movements and possible changes of plan if we are to achieve our goal:

* driving a car through a built-up area from A to B

* cutting a board along a marked line with a handsaw

* walking down the high street to the bank

Let's look at one of them in a bit more detail.

ACTIVITY 1
Time guide
3 mins

Suppose you are driving your car in a built-up area from point A to point B. You know the route you want to take.

Jot down four things which you would have to do to make sure you were driving safely and legally.

* _____

* _____

* _____

* _____

Perhaps you mentioned things like:

* staying within speed limits

* driving at a similar speed to the rest of the traffic

* driving on the right (the left!) side of the road

* matching your speed to the conditions at the time (taking into account fog, ice, darkness, brilliant sunshine or whatever)

What we would be doing in all these instances is making up our minds about a certain tolerance which we could accept driving on that route.

We will, for instance, have made up our mind about how straight we should drive. Weaving from one side of the road would be unacceptable - outside our tolerance - but neither do we expect to be able to drive in a dead straight line. It simply wouldn't be reasonably possible to achieve it.

When we note a variance - something happens which is near the limits of what we think is acceptable - we take corrective action by turning the steering wheel, applying the brakes or whatever. This then brings our performance back within tolerance.

This is essentially what we do to control output at work. The only difference is that, whereas in our own lives we usually decide standards and tolerances largely for ourselves, at work they have usually been worked out after certain information has been collected and analysed and are usually written down.

Let's see how this might work in one particular workplace.

ACTIVITY 2
Time guide
5 mins

An office supervisor has to have 1000 special letters in an advertising campaign typed, checked, put in envelopes, sealed and posted by the end of the week. He starts out well, making clear plans for how to do the task and setting definite schedules for each part of the tasks. He assigns four typists to the job, gives them clear and specific instructions and lets them set to work.

The days go by, and the supervisor sees the typists working steadily away. He is fairly certain that they will meet the deadline set by him. However, when Friday comes, he discovers that only 650 letters have gone out. He then ends up paying overtime for Friday evening and Saturday to get the letters out, even a day late.

If you had been supervisor what would you have done to make sure that the job was completed on time? Jot down two suggestions.

* _____

* _____

Between us we may have thought of a number of different ways of tackling this problem.

What has happened here is that the supervisor has forgotten about one important aspect of the job - CONTROL.

He didn't keep an eye on the rate at which the job was being done and make any adjustments which were necessary as the week went by.

If, for instance, he had noted by Wednesday lunch time that only a third of the work was completed yet half the time had gone, he could have tried to speed up the pace somehow or brought in more typists so that the job could be completed by Friday.

Now we're in a position to draw up for ourselves a definition of the control process.

ACTIVITY 3
Time guide
2 mins

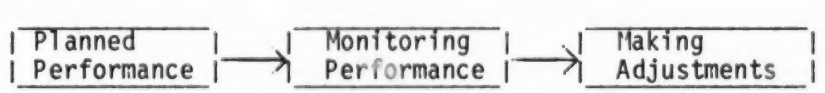
Complete the following statement with a suitable word or group of words.

The control process is designed to continually _____ activities and to _____ _____ so that the activities continue to run as planned.

Here's the completed statement, though you may have used different words.

The control process is designed to continually monitor activities and to make changes so that the activities continue to run as planned.

Let's put what we've learned in diagram form:



Control diagrams can often look more complicated than this but they all rest on this same basic process.

3 Stages in Control

Now let's look at the control process in more detail. We've just established that it involves:

* monitoring

* making changes in order to meet planned targets

ACTIVITY 4
Time guide
3 mins

We've already mentioned that control depends upon establishing standards and tolerances on the basis of information.

The control process has four steps:

Using what we already know, see if you can jot down what the four steps are by completing the following statements.

THE CONTROL PROCESS

1. Set performance _____
2. Collect _____ to measure _____
3. _____ results with _____
4. _____ _____ _____

I would describe the four steps in the control process like this. You may have chosen other words which mean substantially the same thing and are equally acceptable.

THE CONTROL PROCESS

1. Set performance standards
2. Collect data to measure performance
3. Compare results with standards
4. Take corrective action

Now let's look at each of these steps in detail.

3.1 Setting performance standards

We've probably all found at some stage how difficult it is to judge whether something is successful when we don't have a clear standard against which to measure it.

It follows that, to be really useful, standards have to be expressed very clearly and have to give us an exact a measure as possible against which to measure progress.

ACTIVITY 5
Time guide
3 mins

Think about your own workplace for a few moments and then jot down two performance standards which are used in your workplace to measure progress.

* _____

* _____

I have no way of knowing what you are likely to have written in response to that activity. Here are four suggestions from a variety of industries for you to compare with your own response.

* 25 wooden tables to be produced in the workshop in a week.

* The level of impurities in the chemical produced should be less than 0.001%.

* 2 kilograms of steel will be required to produce 1 stove.

* The average time taken to process 1 airline reservation should be 2 minutes.

If we look at these examples we can see that a different measure is being used in each one. The first one defines performance standard in terms of output (25 tables in a week). The second defines performance standard in terms of quality (impurities to be less than 0.001%).

ACTIVITY 6
Time guide
1 min

What measures are used to define performance standard in the remaining two examples?

* _____

* _____

I hope we can agree that

* the use of materials is the measure if the standard is that 2 kilograms of steel should be used in 1 stove

* time is the measure if the standard is that, on average, an airline reservation should take two minutes.

These are not the only measures you can use.

We might equally well use

worktime

accident rates

plant use

product costs.

As we hinted earlier when we were looking at what happens in our own lives, many standards have to allow for a degree of deviation above or below a standard.

SELF CHECK 1 Jot down what this acceptable deviation from a standard is called:

Time guide
1 min

* _____

The answer to this self check is here in the following words, so you'll need to check out your answers carefully. The word we used earlier for the acceptable deviation from a standard was tolerance.

Here's an example of how tolerances are used. Suppose you have a bottle-filling plant which fills 500 ml bottles. You might have a tolerance of (±) 3 ml.

That means that quantities of 497 ml to 503 ml are acceptable and allows for the fact that there are likely to be some very minor inaccuracies in the filling operation.

It isn't possible in every single job to define acceptable performance standards in this way.

What do you do, for instance, if you are trying to measure willingness to help customers, attitude to the job, ability to work under pressure?

Then, of course, you have to rely on the supervisor's personal judgement to a large extent but it is very difficult then to compare one person's judgement with another.

Wherever possible, standards should be specific and should not use vague terms such as 'good performance' or 'minimum waiting time'.

3.2 Collecting Data

Collecting data is so routine in many workplaces that it tends to be taken for granted. Each time you sign a time card or a job sheet or materials requisition or shift log you are putting your authority behind the accuracy of that information. No matter how humdrum and routine it seems it is an indispensable part of the control process and its success depends upon you carrying out procedures accurately and efficiently.

But there's more to it than that.

ACTIVITY 7
Time guide
3 mins

How else do supervisors collect data (not necessarily written) about what is happening in their work area?

* _____

_____

_____

You may have described this in a number of ways and thought of particular instances in your own workplace but I hope any ideas boil down to 'walking the job'.

The supervisor, who goes round the work area several times a day and makes a point of knowing what is going on and how the workteam are doing, builds up a great deal of useful information about performance and the factors affecting it which help him to maintain and improve control.

3.3 Comparing results with standards

If performance standards are clear and precise and the measurement of results is accurate, then the comparison of actual performance and standards should be quite straightforward. Here are two examples:

* The standard for a high street bank is that no customer should be kept waiting in the queue for longer than 5 minutes. The average wait is 3 minutes. The supervisor can feel confident that, in this respect, the bank is providing a service which is well up to the bank's goal.

* In a food processing plant the output standard is 5000 cartons of biscuits per day. The actual output is only 4500 for a whole week. This is a major VARIANCE and shows that operations are not going as planned. The supervisor would see this as a danger signal that the situation needs attention.

This is fairly straightforward.

The problem is in deciding how often to measure the progress of any activity.

ACTIVITY 8
Time guide
4 mins

Here are four situations where you might want to measure performance.

If you can, put a ring round what you think would be the appropriate frequency for measuring performance in each situation.

absenteeism	HOURLY/DAILY/WEEKLY/MONTHLY/ANNUALLY/CAN'T SAY
machine breakdown	HOURLY/DAILY/WEEKLY/MONTHLY/ANNUALLY/CAN'T SAY
materials shortage	HOURLY/DAILY/WEEKLY/MONTHLY/ANNUALLY/CAN'T SAY
maintenance costs	HOURLY/DAILY/WEEKLY/MONTHLY/ANNUALLY/CAN'T SAY

There are no hard and fast right answers to this activity. Here is how frequently I would measure performance in each of these areas but you can probably make a good case for doing something different, depending on the particular circumstances.

absenteeism	DAILY or WEEKLY. It's unlikely that you need to know from hour to hour and knowing only monthly or annually doesn't give you any real chance to take corrective action.
machine breakdown	HOURLY. Presumably urgent action needs to be taken to get the machine mended and to reschedule work. Daily, weekly or monthly measurement may not be good enough.
materials shortage	DAILY. Once again this would need to be followed up fairly swiftly and daily measurement seems to me the most appropriate.
maintenance costs	MONTHLY or ANNUALLY. You're going to be more interested in this in the long term - probably in comparing performance in one year with another.

As I said, though, there's plenty of room here for disagreement. It all depends on the particular circumstances. Indeed, it wouldn't be unreasonable if you had said 'CAN'T SAY' to all of them because you would only make the decision about how frequently to measure performance in the light of what you know about fairly complex situations.

However, I hope we have demonstrated that you can't have one set fixed period of reviewing progress of activities in the workplace. Even within one work area you may have a number of different time schedules for monitoring.

The problem for the supervisor is to balance

THE IMPROVEMENTS TO CONTROL RESULTING FROM MONITORING _____ THE COST AND EFFORT OF MONITORING

Comparing performance against standards too frequently involves you in unnecessary work and expense for no real return. Too infrequent comparisons can mean that danger signals are missed and there are losses in productivity and output.

Getting the balance right depends upon experience and judgement in each separate circumstance.

3.4 Taking corrective action

Now let's look at how we set about taking corrective action.

ACTIVITY 9
Time guide
3 mins

Suppose you are production supervisor of a bakery and you have a workteam of 10 people. Your manager tells you that productivity levels in your work area are not up to standard. You need to find the cause of the variance.

Jot down three possible lines of enquiry which you would investigate in your work area to see if you could discover the cause of the variance.

* _____
* _____
* _____

Here are some of the things I would investigate.

* Is equipment faulty?
* Is equipment properly used?
* Is there absenteeism?
* Are we using inexperienced workteam members who aren't properly trained?
* Are wrong methods being used?
* Is material up to standard?
* Is material used economically (eg Is a lot being spilt?)

10

Once we have found the cause we can decide on the course of action. If, for example, we decide that poor working practices are the cause of the variance then staff training and improved supervision may improve the situation.

Perhaps you are thinking that finding out what causes such an unfavourable variance and doing something about it is rarely as simple as I've described. You're right but, whatever the problem, it helps if we bear in mind two important steps:

* decide what results we want or need to bring about

* consider and weigh up ways in which they can be achieved.

We can sum that up as three key questions:

where are we now?

where do we want to get to?

how do we do it?

ACTIVITY 10
Time guide
2 mins

In the last activity we tried to identify the lines of enquiry which a supervisor in a bakery would have to follow up to see why standards of productivity could not be met.

Suppose he has followed up everything - men, materials, machines, working methods - he can't find a way of improving productivity anywhere.

Jot down what you think might be the problem in this case.

* _____

You may have thought of a number of possibilities (including the suggestion that the supervisor isn't up to the job!). What I was looking for though is that, when everything has been carefully analysed, it may be the standard that is inappropriate in a particular situation. It may be more realistic to change the standard rather than to make changes in the way things are done.

However, that should be the last resort, rather than an immediate response to any suggestion that productivity in your work area is not up to standard.

4 Control and Planning

We've seen that controlling output involves keeping track of progress in all parts of your work area and taking corrective action where it's needed to make sure you meet the goals you've been set.

It follows that systematically working out what these goals should be and how you are going to achieve them - PLANNING - is an equally important part of the process.

PLANNING and CONTROL depend upon each other. Let me show you what I mean.

ACTIVITY 11
Time guide
4 mins

Suppose as supervisor of the commercial office of a telephone company you PLAN to handle 100 service calls a day during the next month.

100 service calls per day is your goal.

Jot down two ways in which having such a plan will help you to CONTROL the work done under your supervision.

* _____

* _____

A clear PLAN such as we had in this activity helps to maintain CONTROL in a number of ways.

* It highlights which activities should be controlled. In this case it is the activities concerned with handling service calls. Other activities will not receive the same priority if you are under pressure.

* The plan gives us a good idea of how work should be controlled. In this case we are concerned above all with the number of service calls handled, not with breaking into a new market or a new geographical area or with the speed of response, for instance. We'll be in no doubt about whether we have succeeded or failed to meet our target.

* A clear plan makes it easy to establish clear standards. In this case a plan of 100 service calls per day is easily turned into a standard against which to measure performance day to day.

So we can see that PLANNING helps to determine CONTROL.

So let's look at the same situation the other way about and see how effective CONTROL can contribute to good PLANNING.

ACTIVITY 12
Time guide
5 mins

Think about the situation we looked at previously and jot down two ways in which you think that you, as supervisor, maintaining good control over what is happening in the commercial office, can help in determining plans for the company.

* _____

* _____

You may not have approached the problem in quite the same way as me but I hope we are broadly in agreement on these answers.

* Controls provide basic data for plans

  In the example we looked at, for instance, an analysis of the number of service calls made per day for the past six months would provide a good basis for planning future targets.

* Controls provide data to reshape goals

  We've mentioned already that sometimes standards need to be changed in certain circumstances.

  Suppose in the example we looked at, records of past performance showed that, with the existing equipment and staffing levels, it was really only possible to handle 80 service calls a day. The current goal of 100 service calls a day would have to be modified or additional people and equipment provided. Without the evidence from previous controls, whether the target could or could not be met would be a pretty fruitless argument.

* Controls provide data on variances

  Controls will provide data on variances in a number of different areas. This means that activities can be studied in detail and solutions to particular problems found which, in turn, affect future plans.

5 The Supervisor and Control

Now let's look at the supervisor's role in the control process. Some controls, such as budgetary control, may be dealt with by your manager or by a specialist department in your workplace or you may be very much involved yourself.

Precisely what control responsibilities a supervisor has differs from one workplace to another but, to do your job properly, it helps if you can have your control responsibilities clearly described, preferably in writing.

ACTIVITY 13
Time guide
5 mins

Think about your own job for a few minutes and jot down the major control tasks which you have.

Obviously I have no way of knowing what is on your list and since supervisors' jobs cover so many industries it is impossible to be very specific.

However, here broadly are the areas of responsibilities in which you would expect to see supervisors having an important part.

* Collecting control data

  This might include:

  collecting and checking time cards
  filling in or collecting production tallies
  routine checking of product quality
  observing work methods
  measuring materials usage and checking stocks
  collecting maintenance data

Collecting data accurately and on time is essential here.

* Using control reports

  You may have to use VARIANCE REPORTS which other people have compiled and which show variances between written standards and actual results in your work area.

  You can be involved in quite a bit of detective work about the real cause of the variance and hard thinking about how the problem can be solved.

* Control of the work area and workteam

  As you probably know only too well, it's the supervisor who usually decides and controls the finer detail of who is doing what and when and how work should be done. Monitoring work in progress and seeing whether it is meeting what you planned is the key to success here.

Taking corrective action, particularly where the workteam are concerned, can be one of the hardest things a supervisor has to do. You'll need all your powers of persuasion, encouragement and leadership. If you have a particular problem in this area you might find it useful to work through some other units in this series. You may find the titles mentioned in this extension helpful.

EXTENSION 1
page 68

6 Choosing Areas to Control

Deciding which areas to concentrate on is often difficult since they all seem important in different ways.

ACTIVITY 14
Time guide
5 mins

Think about your own job for a few minutes and jot down what you think are the six most important areas of activity for you to control.

* _____
* _____
* _____
* _____
* _____
* _____

Obviously there isn't one right answer to this activity. The purpose of it was to give you an opportunity to think about your own priorities which could well be different from some of your fellow supervisors in the same workplace.

Here are some of the key areas which you might like to match up with your own list.

* Use of facilities and equipment - layout, use and maintenance

* Use of materials - purchases, stock levels, storage

* Use of energy and power - electricity, water, waste disposal

* The workteam - safety, communications, training

* Schedules - delivery, performance, shortages

* Quality - rework, scrap, inspection techniques

* Productivity - finding simpler and better ways of working.

Whatever our job, deciding which are the key areas to control boils down to ensuring that you meet two goals:

* Giving the customer satisfaction - providing the customer with the right quality goods or service which he wants when he wants them. (Don't forget that we all have customers. They may not appear to be buying from you but whether it's another department at work or the taxpayer across the counter or the patient in a bed on your ward, they are all customers for the service you provide.)

* Making the best use of resources - that is the equipment, materials and workteam for which you are responsible.

In the rest of this unit we'll be looking at these areas in more detail and at the kinds of controls we can use to enable us to supervise more effectively.

SELF CHECK 2
Time guide 5 mins

Complete the following statements with a suitable word or group of words.

a) The control process comprises _____ activity in progress and taking _____ _____ where necessary.

b) The four steps in control are _____, _____, _____ and taking corrective action.

c) An acceptable deviation from a standard is called a _____.

Decide whether the following statements are TRUE or FALSE.

d) Standards should be as specific as possible. TRUE/FALSE

e) Fixed periods should be set for measuring all performances in any given workplace. TRUE/FALSE.

f) Control depends on planning but planning doesn't depend on control. TRUE/FALSE.

The answer to this self check is here in the following words, so you'll need to check out your answers carefully. a) The control process comprises monitoring activity in progress and taking corrective action where necessary. b) The four steps in control are setting standards, collecting data about performance, measuring actual performance against standards and taking corrective action. c) An acceptable deviation from a standard is called a tolerance. d) Standards should be as specific as possible. Although it isn't always possible to be very specific, especially where people's behaviour is concerned, vague, imprecise standards are very little use to anybody. e) Different activities need measuring over different periods of time. Some you might need to know hourly and others only weekly, monthly or annually. Too frequent measuring can be a great time-waster and will not necessarily provide particularly useful information so this statement is false. f) This statement is false. Control and planning both contribute to and depend upon each other.

7 Summary

The CONTROL PROCESS -	monitor work in progress
	take corrective action if necessary
FOUR STEPS IN CONTROL -	set performance standards
	collect data to measure performance
	compare results with standards
	take corrective action if necessary.
STANDARDS should be	CLEAR, EXACT, WRITTEN
PERFORMANCE CONTROL CHECKS	
	should maintain or improve performance
	should not cost more to carry out than they save

PLANNING AND CONTROL depend on and contribute to each other.

PART B WAYS OF CONTROLLING OUTPUT

1 Introduction

So far we have looked at the control process and seen that it is made up of four basic steps - setting standards, measuring performance, comparing performance with the standard and taking corrective action if necessary. We also saw that planning and control are very dependent on each other.

I hope by now that you're beginning to see how important is the role of the supervisor in all this and perhaps at the back of your mind you've made a note of some areas in your own workplace where you could improve your output control.

We now need to turn our attention to two related tasks; the things we need to control and the techniques we might use in order to exercise that control.

Let's look first at some of the more useful techniques which will help us control output:

2 General Techniques

It's possible to establish control standards and measurements for everything - from making a cup of tea in the canteen to monitoring how much profit is made in the entire workplace. As a supervisor you would be right in the thick of that process and you may well feel that you could easily be overwhelmed with work if you had to measure and control every activity in your work area.

The secret of success in maintaining effective control is SELECTION.

This means deciding which factors are critical to good performance and concentrating on them.

So let's look first at how to decide what factors to control.

2.1 Critical control points

Deciding upon critical control points demands that you stand back from the job and answer two questions about your particular work area:

* WHAT ARE THE MOST IMPORTANT GOALS IN MY WORK AREA AND HOW CAN I TELL IF I AM MEETING THEM OR NOT?

* OF ALL THE THINGS WHICH COULD GO WRONG IN MY WORK AREA, WHICH ARE MOST LIKELY TO DAMAGE PERFORMANCE?

Obviously everybody's job is different and we will each have our own answers to these questions in our own workplaces. Let's try looking at this example to identify some critical control points which might set you thinking about your own workplace.

ACTIVITY 15
Time guide
5 mins

Suppose you are in charge of a Chinese take-away restaurant in the middle of a busy city centre. Trade is highly competitive. You have three kitchen staff and one receptionist and on a typical day you sell 150-200 meals.

You'll be most concerned with two things:

* the service you are giving your customers (remember it's a highly competitive business)

* that you are making the best possible use of resources - the workteam, equipment and materials you use.

Jot down six examples of critical control points in these two areas.

CUSTOMER SERVICE

* _____

* _____

* _____

RESOURCE PRODUCTIVITY

* _____

* _____

* _____

We may not have thought of quite the same points. There would be all sorts of things to consider in practice (many more than six key points) and our priorities would depend upon what we saw as the goals of the business. We might see the problem differently, for instance, if we were setting up a new business from how we might see it if we were trying to manage with fewer people without reducing the standard of the food provided. However, these are some of the critical control points I would concentrate on.

CUSTOMER SERVICE

Menu choice - Is it as varied and appealing as our competitors'?

Cost - Do our prices compare favourably with our competitors'?

Quality of food - Do we and the customers think our food is of the best quality which can be provided at the price?

Waiting time - This is a take-away service after all. Are we keeping customer waiting time down to an acceptable level?

RESOURCE PRODUCTIVITY

Use made of workteam - Are they all fully occupied most of the time? Is the work shared out evenly? Are two people doing the same job unnecessarily? Can some jobs be done in advance to avoid a last minute rush?

Use made of equipment - Is all the equipment used regularly so that it justifies the room it takes and the cost of having it? Is it used efficiently and properly?

Stocks of materials - Do we have as much as we need in stock? Do we order and receive supplies when we need them ?

Material wastage - Are we cooking too much of certain meals which don't sell? Is the way that we prepare and serve meals wasteful or extravagant?

As I said, it's quite possible that you've come up with a rather different view of the problem but I hope at least it has given you a chance to see <u>how</u> we start to think about determining critical control points.

Even in the same workplace supervisors may well have different critical control points.

For instance, if you were a supervisor in a production area you would expect to control productivity levels closely but you may not expect to be told immediately if the air conditioning plant breaks down as it would not seriously affect production. If you were a supervisor in the computer section, on the other hand, controlling the air conditioning might be very high on your priority list because, if it failed and the temperature rose critically, the computers might not work and the section's performance would be seriously affected.

Similarly, although every supervisor must maintain safety records and maintain safe conditions as far as possible, if you are in charge of an accident reduction programme in your workplace, then safety records will be your top priority.

So we can see that critical control points have to be determined for specific situations in specific work areas and doing that depends upon knowing what you are trying to achieve and what are likely to be the problems which might hinder you doing so.

2.2 Setting your own standards

Quite possibly many of the standards you operate to are given to you by another department such as Quality Control, Accounts or Scheduling. This doesn't mean, though, that you have no responsibility for standards.

ACTIVITY 16
Time guide
3 mins

Jot down two responsibilities which you would have for standards which may have been given to you by another department.

* _____

* _____

Here are some of the responsibilities for standards which I can identify. You may well have thought of more.

* Making sure the standards are understood by the workteam.

* Working out how the standards apply in your particular work area.

* Reporting back if standards set cannot be operated in your work area.

* Setting subsidiary standards.

Let's have a look at the last of these in more detail. Sometimes you receive a standard which you cannot just pass on to your workteam and expect them to apply. You have to work out precisely what should happen in your work area in order for performance to meet the standard set and then give these subsidiary standards to your workteam.

Let me show you an example of what I mean.

ACTIVITY 17
Time guide
3 mins

Suppose you are a supervisor in an order processing department in a large mail order store. Your department

receives all customer orders
checks customer credit ratings
produces invoices and delivery notes if the goods are in stock
produces out-of-stock notices if goods are not in stock.

Your new Marketing Director has just issued a new standard for your department:

"All orders will be entered and shipped, or out-of-stock notices sent, within twenty four hours after the order has been received."

What will you have to do about the various jobs in your own department to make sure this standard is met?

This standard is too general for you simply to pass on to your workteam although it gives <u>you</u> a clear indication of what is expected from your department.

You have to set subsidiary standards for each of the jobs in your department so that, overall, the major standard is met.

Either from your past experience or from good work measurement, for example, you might decide that work would have to be done at the following rates to meet the standard set:

* Looking up customer accounts in a file - 100 accounts per hour

* Typing invoices and delivery notes - 65 per hour

* Checking credit information - 60 per hour

In other words you would need to set a time standard for each activity so that, as a whole, the overall standard could be met.

This network of individual standards can then be used to monitor progress and to take action. (Remember the four stages in the control process?)

So if you find, for example, that work is falling behind in checking credit information, then you can chase up that activity and perhaps bring in extra help or persuade people to work faster. Without an individual standard, you may not realise things are going wrong until the problem is quite serious.

ACTIVITY 18
Time guide
3 mins

Jot down two further ways in which subsidiary targets, such as those we've just looked at, might help your supervision of the order processing department.

* _____

* _____

Once again, you may have thought of a number of possibilities but here are two which strike me particularly.

* Subsidiary standards will pinpoint exactly where help is needed if the volume of orders becomes so great that you cannot cope without extra help being drafted in.

* You can assess workteam members' individual performances in certain jobs if you have a standard for the job.

ACTIVITY 19
Time guide
4 mins

Here are three ways in which the subsidiary standards which a supervisor might work out are often arrived at. Jot down one advantage and one disadvantage of each one.

GUESSWORK

Advantage _____

Disadvantage _____

USING PAST PERFORMANCE

Advantage _____

Disadvantage _____

SYSTEMATIC ANALYSIS

Advantage _____

Disadvantage _____

Here are my comments on those three ways of setting standards for you to compare with your own experience.

GUESSWORK

This at least has the advantage of being quick! If you haven't any experience or any hard information to go on this is what you may be forced to use and you shouldn't underestimate the usefulness of your intuitive 'gut' feelings about the job. However, if you rely on guess work you may set an impossible level of output as the standard. This can be quite damaging. It has no use as a means of control because your standard is never met anyway and the workteam are likely to feel very discouraged and may end up ignoring your standard altogether.

USING PAST PERFORMANCE

This at least is more informed than pure guesswork. However, standards based on past performance simple reflect that performance - they don't take into account whether that performance was good or bad.

For instance, using past performance as a standard we might reasonably say "With a workteam of three, we have always produced 1,000 units a week in the past so let's continue with that as the standard." What we don't know though is whether 1,000 units a week is a good performance.

SYSTEMATIC ANALYSIS

This is the soundest basis for all kinds of standards. You carry out careful observation and measurement of each step in the job to determine how long it should take and the quality which should be produced. The disadvantage is that this involves a lot of work and is time-consuming. You may need to call in specialist help from your Work Study Department but you may find there is quite a lot you can do in your own work area off your own bat. If you would like to know more about how to carry out an analysis of work you might find it useful to work through the unit on Method Study in this series.

EXTENSION 2
page 68

2.3 Controlling performance

Having set performance standards - the first step in control - you are then ready to go on to the next three steps -

measuring actual performance

comparing actual performance with standards

taking corrective action to bring performance back to standard

The last of these is often a difficult job, taking careful thought and consideration. Here's one situation to think about.

ACTIVITY 20
Time guide
5 mins

Suppose you are production supervisor in a factory making wooden chairs. One of the operations you control is the cutting of the legs for the chairs to a precise length. There is a special machine which does this within prescribed tolerances. From your experience you have set a standard of 1000 pieces to be cut per day, the work to be completed within a four hour period.

At the end of the first four hour period, one of the workteam tells you that only 780 satisfactory pieces have been cut. You will have to take corrective action.

But what do you think can have gone wrong?

Jot down three suggestions.

* _____

_____

* _____

_____

* _____

_____

Before you can take corrective action you have to find the underlying cause of the variance.

Here are a few possibilities any one of which could have caused the problem we have just looked at.

* The workteam may not be working at the required rate or may not be using the correct method.

* The cutting machine may be breaking down more than usual giving the workteam less productive time than expected in a four hour period.

* There may have been a problem with materials shortage.

* A large number of pieces may be outside the required size and have been scrapped or re-worked thus giving rise to the low number of acceptable finished parts.

Hopefully, as supervisor, you would have some information to work on rather than having to rely on a hunch but, either way, you will be expected to take corrective action. If performance is still not up to standard you would have to try something else. Getting the balance right and really getting to grips with the underlying cause can be quite a complex business. A systematic method of approaching the problem can be a great help.

EXTENSION 6 page 69

Here is a list of the steps involved in solving a problem. We're only going to look at it briefly here but the subject is dealt with in greater detail in another unit in this series - Taking Decisions.

STAGES IN PROBLEM SOLVING

Identify the problem

Collect information

Develop alternative solutions

Weigh up the alternatives

Make a choice

Carry out the alternative of your choice

Follow up to assess success

So there are our useful general techniques, but what do we apply them to in order to exercise control? We'll look at these in some detail now, but let's remind ourselves very quickly as to what they are:-

Work Flow; Materials; Quality; Plant and Equipment; Work Methods.

Now to the detail:

3 Controlling Work Flow

A critical control point for any supervisor must be controlling the flow of work in the work area.

You will be expected to achieve a certain amount of work in a fixed period and it will be your responsibility to meet that target by using your workteam and equipment effectively.

As we've seen, this will involve developing your own subsidiary standards.

REFERENCE 1 page 70

Let's look at an example of a workflow problem.

ACTIVITY 21
Time guide
3 mins

Imagine you are a supervisor in charge of three different work centres and you are asked to complete four separate orders in the coming week. Each order needs differing amounts of time, in different sequences at each of the three work stations.

Here is a chart showing you what is required from each order and in what sequence.

ORDER NO.	1			2			3			4		
OPERATION SEQUENCE	1	2	3	1	2	3	1	2	3	1	2	3
WORK CENTRE	A	B	C	C	A	B	B	A	C	A	C	B
ESTIMATED TIME (HRS)	4	8	2	10	4	6	6	4	8	4	10	12

Jot down what you think you would need to help you make sure the orders are completed.

*

Perhaps you said something like a plan or schedule or timetable showing the orders planned for each work station each day.

We can do this with a GANTT chart named after the American Industrial Engineer Henry Laurence Gantt who developed it around 1915.

Here's what a Gantt chart would look like assuming that each order must be finished before the next is begun.

WORKCENTRE	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	MONDAY
A	Order 1			Order 2		Order 3
B		Order 1			Order 2 / Order 3	
C		1	Order 2			Order 3

ACTIVITY 22
Time guide
3 mins

Jot down two problems which would arise from organising the flow of work in the way shown in this chart.

* _____

* _____

_____

The flow of work is orderly and systematic but you probably realised that equipment is going to be standing idle for long periods of time and, worse still, the orders aren't completed within a week as expected.

We would obviously have to overlap the orders whilst still keeping activities for each order in the right sequence. Here's what a completed Gantt chart would look like in these circumstances.

WORKCENTRE	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	MONDAY
A	Order 1 / Order 4	Order 2		Order 3		
B	Order 1		Order 2 / Order 3		Order 4	
C	Order 2	1	Order 4		Order 3	

(Each day represents 8 hours)

You can see that by re-arranging the orders we can complete them all within five days. A Gantt chart gives you:

* a clear picture of what needs to be achieved at every work station each day

* a clear picture of what the effect of delays in any one work station will be so that you can take corrective action as and when it is needed.

A Gantt chart is very useful but clearly it wouldn't be the only technique you would use to control workflow in your work area.

ACTIVITY 23
Time guide
5 mins

Think again for a few minutes about the situation we have just looked at. You are responsible for the operation of three different work stations, filling one-off orders which require differing sequences on the work stations.

Jot down four other possible measures of performance you might use if you were this supervisor. Here are two suggestions to get you started.

* Actual completion times and dates of orders
* Extent of delays in delivery (if any)
* _____
* _____
* _____
* _____

Here are my suggestions though these are not necessarily all. You notice that I have divided them into two groups. Whatever your suggestion I think you will find that they fall into these same groups.

CUSTOMER SERVICE	USE OF RESOURCES
* Actual completion times and dates of orders	* Actual operating times of the workteam and of machines
* Extent of delays in delivery (if any)	* Extent of deviations from target times
* Reasons for delay (eg machine breakdown, poor quality materials)	* Reasons for not meeting target times

Perhaps you would like to try this self check before you go any further.

SELF CHECK 3 Complete the following statements with a suitable word or words.
Time guide
5 mins

a) The secret of success in maintaining control is to select _____ _____ _____ and concentrate on them.

b) Whatever the job, the factors we need to watch will fall into two groups: _____ service and _____ productivity.

c) Putting given standards into operation in your work area means that you have to set _____ standards for your workteam.

d) Our own standards tend to be based on _____ _____, _____ or _____ _____.

e) A _____ chart is a useful technique for helping you to organise workflow and to monitor progress.

The answer to this self check is here in the following words, so you'll need to check out your answers carefully. a) We cannot realistically monitor everything which happens in our work area. The secret of success is to select critical control points - things which most affect achieving your goals or are most likely to prevent you achieving your goals if they go wrong. b) Those critical control points will fall into two groups: customer service and resource productivity, that is how much output we are getting for the efforts of the workteam, the equipment and materials. c) You may have used a word like 'personal' or 'individual' to complete this statement. Either would be acceptable but the word we have used in the unit is 'subsidiary'. Standards which are given to you may have to be broken down into separate, specific standards for various activities or workteam members to work to. d) Our own standards, the subsidiary standards referred to in question c), tend to be based on past performance, guesswork or systematic analysis. e) A Gantt chart is one of the techniques you can use to help to organise workflow and to monitor progress.

4 Controlling Materials

In most workplaces materials account for 50% of the total costs so it's clearly important that control is kept over the way materials are looked after and used.

ACTIVITY 24
Time guide
3 mins

Using your own experience, jot down three problems which can arise in the use or care of materials which will affect performance in your workplace.

* _____

* _____

* _____

Typical suggestions would include:

* Delays caused because materials are not available when and where they are needed.

* Materials are wasted because the process in which they are being used has not been well thought out.

* Materials spoiled by rough handling or damaged in storage.

* Too much time spent moving materials about rather than actually working with them.

Let's look at some of the major areas of responsibility for materials and see what kinds of control you could use. We'll think about

receiving
handling
processing
storage

Whatever you job, you can probably fit your responsibilities for materials under these headings.

4.1 Receiving materials

ACTIVITY 25
Time guide
2 mins

You receive materials into your work area and you inspect them, or ask one of your workteam to do so, when they arrive.

Jot down three points about the delivery of materials which you would want to check.

* _____

* _____

* _____

Well, you could have thought of any number of points. I would highlight:

quantity - have you received as much as you ordered?

condition - are any of the goods damaged?

destination - where are the materials being kept or what are they being used for in the immediate future in the workplace?

A simple form will provide you with a record of this information. Perhaps your workplace already has such a form but, if not, you might be able to adapt something like this for your own purposes.

DEPARTMENTAL RECEIVING REPORT

DEPT. NO.	REQUISITION NO.	DATE
CHECKED BY	PARTIAL ☐ COMPLETE ☐	

QUANTITY	DESCRIPTION	LOCATION	CONDITION		QUANTITY & REASON
			OK	RETURNED	
			☐	☐	
			☐	☐	
			☐	☐	
			☐	☐	

4.2 Handling materials

Usually you will receive clear instructions on the procedures you should use for major materials-handling and the equipment you should use.

As a supervisor though you can make a major contribution to the safe and efficient handling of materials in your workplace.

ACTIVITY 26
Time guide
4 mins

Jot down three things which you would do as a supervisor to ensure that materials are safely and efficiently handled by your workteam.

* _____

* _____

* _____

What you have said in response to that activity will, of course, depend on the nature of your particular job. Here are some possibilities which you may have included.

* Write and give clear instructions on how to use hand trucks, carts and so on safely.

* Draw up daily schedules for the use of handling equipment so that materials can be moved in bulk where possible to save several trips to and from the stores.

* Keep a constant eye on what is happening and make sure that carelessness in the treatment of materials, reckless fork lift driving, overloading of shelves and so on is kept to a minimum.

* Organise the work area so that materials handling requires as little travel as possible.

4.3 Processing

This is the actual use of materials in getting the job done - another prime area for control.

What is really needed is some kind of simple analysis which shows what materials were used at the start of the job, what the yield was and the amount of scrap or waste or rework which resulted.

Here is an example of a typical report which gives this sort of information.

MATERIALS CONSUMPTION VARIANCE REPORT

DEPARTMENT NO: 25 MONTH: JANUARY 1986

MATERIAL	CALCULATED STANDARD CONSUMPTION	ACTUAL USAGE	VARIANCE (%)
No. 125 Sheet 24" x 48"	3896 sheets	3905 sheets	+9 (0.23)
No. 125 Sheet 36" x 72"	600 sheets	640 sheets	+40 (6.67)
No. 56 Roundbar 1" Dia.	1200 metres	1140 metres	-60 (5)
No. 471 Fittings (Round)	1450 pieces	1680 pieces	+230 (15.9)

This form shows standards, actual results and variances for materials consumption - three of our four stages of control.

The variance is worked out by subtracting the actual amount used from the standard. We've shown it first as the actual number of items and then as a percentage variance from the standard. The standard reflects the product levels planned and will contain an allowance for a certain amount of waste which is regarded as normal.

ACTIVITY 27
Time guide
3 mins

Look at that example of a Materials Consumption Variance Report again and jot down one thing which you would want to look into if you were the supervisor concerned.

*

I hope we can agree that performance seems reasonable for most materials but not good for No 471 Round Fittings which shows a variance of almost 16% from standard.

If you were the supervisor responsible for this work you would have to find the cause and eliminate it. Perhaps the purchased part was sub-standard. Perhaps there has been some pilferage. Perhaps it is a clerical error and does not represent the true picture. It would be down to you to find out and to take the appropriate corrective action.

4.4 Storage

If your job involves making something then it's quite likely that materials and unfinished goods spend quite a bit of time in your work area rather than in the safety of a central warehouse.

You're responsible for them while they are in your work area.

ACTIVITY 28
Time guide
3 mins

Jot down three of your responsibilities for storage of materials and goods in your work area.

* _____

* _____

* _____

Typical suggestions would include:

* Checking stock levels in the work area and making sure you have enough to meet anticipated demand.

* Being responsible for safe storage. This includes knowing about proper floor loads, stacking heights, shelf strengths and special precautions for storing fragile and flammable materials.

* Making sure things are safe from pilferage, theft and sources of damage such as outstanding corners, heaters and so on.

Once again, to maintain control effectively you need to set standards. Let's look at an example of what I mean.

ACTIVITY 29
Time guide
5 mins

Here are some details about the use of materials in your work area.

You use 800 units on average per day. You normally order a 10 day supply at a time. At peak times (three months of the year) 15 days supply is ordered at a time to cope with the extra demand.

Once the order for materials is received, it takes 3 days for them to be delivered to the factory. An extra 3 days supply is held to protect against delays or sudden, unforeseen demand. This is called the safety stock.

What would be the minimum stock level you would be happy with?

* _____

I hope we can agree that you would need six days' requirements in stock as a minimum.

6 x 800 = 4,800 units.

This is because you want to keep three days' supply as safety stock and you have to allow another three days for delivery.

We would also need to know the maximum stock level we should hold but that will depend upon the time of year. At peak times it will be 15 days' requirement and, for the rest of the year, only 10 days' requirement.

Here is that information summarised on a chart.

	STOCK HELD AT	
	NORMAL TIME	PEAK TIME
MIN. STOCK LEVEL	4,800	4,800
ORDER QUANTITY		
a) 10 days' requirements	8,000	
b) 15 days' requirements		12,000
MAX. STOCK LEVEL	12,800	16,800

A simple standard like this will let the supervisor know precisely when to order more supplies and will help him to follow up and check stock levels.

A good supervisor would also be expected to make good estimates of

usage

time required to replenish goods

likely delays

likely changes in demand caused by overtime, rush orders or seasonal variation.

5 Controlling Quality

Whatever our job, poor workmanship causes quality problems and, as a supervisor, you are in the front line in monitoring performance and taking corrective action to make sure performance comes up to standard.

Let's look at how ensuring quality relates to what we have said about control. As we've seen, controlling output and ensuring quality both depend upon having standards.

ACTIVITY 30
Time guide
2 mins

What is wrong with this instruction as a quality standard to work to?

"Make each table leg as close to 50 cms as you can."

I hope we can agree that, as a quality standard, this fails because it doesn't tell you whether the standard has been met or not. How near to 50 cms must it be to be acceptable?

In a situation like this we would expect there to be a certain tolerance for the length standard so that we know precisely how much longer or shorter the table leg could be without affecting the performance of the table - perhaps plus or minus 1 mm.

So we can say that standards need to be

CLEAR, CONCRETE, MEASURABLE

so that we know what we're aiming for and when we have achieved it.

ACTIVITY 31
Time guide
5 mins

Jot down three ways in which you can ensure that you set clear, concrete and measurable standards in your work area.

* _____
* _____
* _____

Answers to this activity are likely to be pretty varied since everybody's job is different but here are some points which I would suggest which will apply to a wide range of jobs.

* Set specific quality standards (the appearance of letters, the way things are packed or stored) in areas where they are lacking.

* Keep examples of acceptable quality and unacceptable quality and make sure everyone has a chance to see them.

* Put your standards in writing and make sure everyone can easily get a copy when they need it.

* Talk about quality with the workteam. Find out from them the reasons for poor workmanship so that your standards are in terms they understand and are focused on critical areas.

Maintaining quality is something which has to be worked at on a daily basis. It can't just be left to look after itself once it has been achieved.

The following tips might help you to 'think quality' yourself and to help your workteam up to scratch too.

* Earmark some time each day for inspecting quality yourself. It doesn't matter how much you do, as long as you inspect something each day.

* Concentrate mainly on the areas where quality can be made or lost. Inspection of things which rarely go wrong needn't be so frequent but shouldn't be forgotten altogether.

* Follow a different route each time or carry out your inspection at a different time each day.

* Select at random 5% to 10% of the output at a particular work station (for example invoices typed) and inspect each one carefully.

* Involve the workteam in maintaining quality and in thinking of ways to improve it.

* Keep the workteam informed about quality performance. Put quality records, scrap percentages etc on a notice board where everybody can see it.

6 Controlling Plant and Equipment

Depending upon your particular workplace you may have total responsibility for the control of the equipment in your work area or you may have virtually none. Either way, as supervisor, you are in a very important position since you are responsible, on a day-to-day basis, for how much and how effectively they are used.

Let's look at two typical critical control points which will concern many supervisors:

* providing adequate workspace and arranging equipment in the workplace

* maintaining and servicing equipment.

6.1 Assessing space and arrangement of equipment

If you are really going to get down to thinking about the use you make of the space available you need some kind of floor plan of your work area which shows:

* where services such as water and electricity are

* where equipment which cannot be moved is

* the routes people or materials tend to take (remember to allow enough width if equipment such as a trolley is being used)

Then once again, we need standards against which to measure the present layout. Without them we risk just moving everything around for the sake of it.

So what do we want or expect from a good work area layout?

ACTIVITY 32
Time guide
4 mins

Suppose you are going to lay out a new work area for your workteam. (If you don't have a fixed work area, imagine you are laying out a new office or shop floor.)

Jot down three things which you would try to achieve in your layout. Here's one suggestion to get you started.

* Maximum flexibility - so that the layout can quickly be changed to meet changing circumstances.

* _____

* _____

* _____

Here are some other points which you might have included on your list.

Maximum use of volume - Are you using all the space, up to the ceiling, as effectively as possible. This is particularly important in stores.

Maximum visibility - Can you see the whole work area at once? There shouldn't be any unplanned out-of-sight areas.

Maximum accessibility - Is it easy to get to every part of the work area?

Minimum distance - People and work should have to move about as little as possible and, where movement is inevitable, should be able to go by a direct route.

Minimum handling - This follows from the previous point. Handling is tiring and risks damage so it should be kept to a minimum.

Minimum discomfort - Keep draughts, poor lighting, excessive heat or cold to a minimum.

Safety - Nobody should be in danger as a result of the way the work area is laid out. For example, space around a machine should never be so cramped that the workteam are in danger when using it.

Security - The layout should make pilferage, theft or break-ins as unlikely as possible.

One way flow - As far as possible, work should flow in one direction through the workplace. Of course, if you work in something like a large chain store that probably isn't possible, but you can imagine the chaos which would result in, say, a factory if you didn't have all work flowing in one direction.

Assuming that you are fairly happy with the way your work area is laid out, how can you measure its performance?

Perhaps that sounds a rather odd thing to say. The performance of a space? Nevertheless you might want to see how your work area compares with another of a similar size or, for some other reason, want to measure what you are actually achieving in the space available.

You usually do this by using ratios. So we might, for instance, talk about 'output per square foot'. We might describe that output either in terms of the units we have produced or in terms of their value.

ACTIVITY 33
Time guide
3 mins

Jot down one other example of a ratio which you think would be useful to measure the use made of workspace.

*

Well there are any number of possibilities and it's quite possible you have thought of one which I haven't mentioned. Here are three possible examples.

Square feet per employee	- useful for planning for people's needs during a period of expansion.
Productive area/total floor space	- an overall measure of how much space is used for the actual job.
Storage area/total floor space	- a measure of non-productive space which should be kept to a minimum.

You should be able to measure any planned improvements in these sort of terms so that you can see, before you start moving the furniture and fittings, what the planned improvements will actually achieve.

6.2 Maintaining Plant and Equipment

Perhaps your workplace, like many others, has a separate maintenance department.

ACTIVITY 34
Time guide
1 min

Does that mean maintenance isn't your responsibility?

*

I hope you answered a firm NO for that. Maintenance is every supervisor's responsibility.

You are responsible for:

* getting a normal life's work out of the equipment in your work area.

* ordering maintenance as soon as it's needed.

* training your workteam in good habits so that excessive wear or damage to equipment is prevented.

Let's see how you can apply our control process to the problem of maintaining equipment in good order.

Maintaining Equipment.

You can take broadly one of two approaches to maintenance:

BREAKDOWN MAINTENANCE -	repair a machine when it breaks down.
PREVENTATIVE MAINTENANCE -	inspect machinery often and replace parts which are likely to fail.

ACTIVITY 35
Time guide
5 mins

Suppose you want to operate a preventative maintenance system for some expensive equipment for which you are responsible.

Jot down two standards which you would have to set to control the preventative maintenance system.

* _____

* _____

Well, the system must tell the maintenance team exactly what to do, how often to do it and when to start. Here are some of the standards you would have to develop.

A Maintenance Schedule

This will identify each part of the equipment which needs maintenance and will say when it should be done. It will be based on the manufacturer's recommendation and past experience.

Check Lists

This is like a guided tour of the equipment. It goes through the important points of the machine in the order in which you come to them, giving instructions on how to spot trouble or possible failures and saying what to do about them.

Here's an example of such a check list.

CHECK LIST No. 31-4

EQUIPMENT: DRILL PRESS (1690 Series)		FREQUENCY		
COMPONENT OR SYSTEM	INSTRUCTIONS	MONTHLY	QUARTERLY	6 MONTHLY
Electrical	Inspect switch for poor contact or short. Replace if needed.	X		
	Look at wire for fraying or loose connections. Replace if needed.	X		X
Table	Test table settings for looseness. Adjust if needed.	X		

Preparing these lists of inspection and maintenance instructions is obviously a task that requires considerable experience and skill, as well as time and attention. However it is an example of a necessary standard that has to be set if effective control is to be maintained.

But how do we know whether our preventative maintenance programme is successful? How do we monitor it? We need a measure of performance.

ACTIVITY 36
Time guide
5 mins

Suppose we want to know:

* whether the preventative maintenance programme is meeting the standard set for it.

* whether it is successful in terms of maintaining equipment.

Jot down one measure of performance which we could use under each heading.

* _____

_____

Here are my suggestions to compare with yours.

Measures for comparing actual with standard

* Compare planned dates for maintenance with actual dates maintenance was carried out.

* Compare planned time allowed for maintenance with actual time taken.

* Compare planned maintenance costs with actual costs.

* Compare costs of corrective action with costs of new purchases or replacement of equipment.

Measures for effectiveness of preventative maintenance

* Machine availability per week.

* Increase or decrease in breakdown maintenance per week.

Involving the workteam in monitoring the equipment and letting them see that you are interested and concerned will, in turn, encourage a more responsible attitude to maintaining the equipment. This means that faults are likely to be picked up earlier and the need for breakdown maintenance should be reduced.

We'll be looking at the importance of involving the workteam in the control process in the next part of the unit.

7 Controlling work methods

As a supervisor you, more than anybody, have to decide

what will be done
who will do it
how it will be done.

How precisely you define these three points will be the standard for the job.

ACTIVITY 37
Time guide
4 mins

Think of any job at work which you might ask one of your workteam to do.

Jot down some of the information you would include in the standard for the job. Try to think of at least four items.

* _____

* _____

* _____

* _____

Assuming that your workteam aren't experts in the job you are asking them to do, they would need several pieces of information.

I've listed the main headings. I hope you'll find that you can fit the points you've suggested under these headings.

Method

This should be a clear, unambiguous statement of the steps to be taken.

Equipment

Especially important if there is a choice of machines available.

Time

How long the job should take. You may use a standard time set using work study methods or you may just have to use your judgement as to what is a reasonable standard to complete the job competently.

Materials

This may be a list of ingredients or a drawing.

Production Aids

Any jigs, tools, fixtures, gauges, small tools or other devices needed to carry out the job as you have stated in the method.

Quantity

A statement of how much you want made. Determining this may influence the method you choose depending on whether you are talking about a small batch or a long run.

That list may vary.

You may need to give a more detailed standard in some circumstances or if, on the other hand, you are dealing with an experienced craftsman, he may need very little detailed information.

Perhaps all that sounds rather daunting but it need not be.

Here is an example of a work method definition:

Title: Vegetable Risotto

Materials Required:

1 small onion
1 stick celery
1 tomato
2 oz (50g) mushrooms
2 oz (50g) raw rice
8 fl oz (225 ml) vegetable stock
pinch of mixed herbs
salt and pepper
½ teaspoon (2.5 ml) yeast extract
2 teaspoons (10 ml) tomato puree
1 oz (25g) cheddar cheese grated

Cooking Method (Method of Operation)

1 Chop the onion, celery, tomato and mushrooms and put into a small pan with the rice, vegetable stock and herbs.

2 Bring to the boil, cover and simmer for about 20 minutes until the rice is tender and the stock absorbed.

3 Add seasoning and yeast extract to taste and stir in the tomato puree.

4 Serve with grated cheese.

No matter how inexperienced or unwilling, we could probably all produce a meal for ourselves of an acceptable standard following that work method standard.

Notice though that in this standard there is some allowance for personal taste in the amount of seasoning we add. Perhaps you feel that that is the point at which you could ruin the whole thing!

Clearly, the more precisely performance standards can be defined, the better and fairer work method control will be. Actually drawing up the standards can be quite a challenging task - only matched by the difficulty of persuading the workteam to accept them and to accept corrective action when performance is out of standard.

We'll look at this in Part C.

In this part of the unit we have mentioned several techniques which you could use to improve output control in your workplace. If you would like to know more about them and would like to find out about other techniques which we have not had time to cover here, you might find it useful to take up this extension.

EXTENSION 3
page 68

Before we move on, try this self check on what we've said so far.

SELF CHECK 4
Time guide
10 mins

Complete the following statements with a suitable word or group of words.

a) Prime control areas in materials control in the workplace are receiving materials, _____ materials, _____ materials and _____ materials.

b) To control quality you need standards which are _____, _____ and _____.

c) To improve the maintenance of quality standards in your work area you could _____ in areas where they are lacking; keep examples of _____ _____; produce _____ standards; involve _____ _____.

d) Responsibility for plant and equipment will usually include responsibility for the _____ of equipment in the workplace and arranging for the _____ and _____ of equipment.

e) The layout of the work area should allow for maximum _____, maximum _____ and maximum _____.

f) A programme of preventative maintenance means that a maintenance _____ and _____ _____ will have to be produced.

g) When you set up a standard for a work method you should normally include the _____ to be used, the _____ to be used, the _____ to be used and the _____ to be taken.

The answers to this self check are here in the following words so you will need to check your answers carefully. a) Prime control areas in materials control in the work place are receiving materials, handling materials, using or processing materials and storing materials. b) To control quality you need standards which are clear, concrete and measurable. c) To improve the maintenance of quality standards in your work area you could set specific standards in areas where they are lacking; keep examples of acceptable and unacceptable quality; produce written standards; involve the workteam in discussion of quality standards. d) Responsibility for plant and equipment will usually include responsibility for the arrangement or layout of equipment in the workplace and arranging for the maintenance and servicing of equipment. e) The layout of the work area should allow for maximum flexibility, maximum use of volume, maximum visibility, maximum accessibility. Any three of these would have been correct. We also mentioned the importance of keeping travel and handling to a minimum, ensuring the work only moves in one direction and considering the safety, security and comfort of the workplace. f) A programme of preventative maintenance means that a maintenance schedule and check lists will have to be produced. g) When you set up a standard for a work method you should normally include the method to be used, the equipment to be used, the materials to be used and the time to be taken. We also mentioned the quantity to be made and any production aids which might be referred to in the method.

8 Summary

Control depends on selecting CRITICAL CONTROL POINTS.

These are the factors which

DIRECTLY AFFECT ACHIEVING YOUR MOST IMPORTANT GOALS

or

ARE MOST LIKELY TO PREVENT ACHIEVING GOALS IF THEY GO WRONG.

Critical control points relate to - CUSTOMER SERVICE
USE OF RESOURCES

SUBSIDIARY STANDARDS for each activity in your work area ensure that OVERALL STANDARDS are met.

Critical areas for any supervisor to control are:

WORK FLOW -	a Gantt chart will help you plan and monitor
MATERIALS -	keep simple records of the receipt and use of materials
QUALITY -	produce clear, concrete and measurable standards
PLANT AND EQUIPMENT -	plan layout effectively and, if you use preventative maintenance, draw up maintenance schedules and check lists for each major item of equipment.

PART C THE WORKTEAM AND CONTROL

1 Introduction

We've discussed the importance of choosing critical control points and examined some techniques which will help you to control output effectively. You may well be feeling though, quite rightly, that without the cooperation and support of your workteam, it can be enormously difficult to maintain the kind of control you would like.

How well you encourage them to work to agreed standards, how willingly you can persuade them to take corrective action, how effectively you train them and use their skills and how well you put your message across to them will dictate the standard of output from your work area.

Let's begin by looking briefly at how you can encourage the workteam to work to an acceptable standard - at motivation in other words.

2 Motivation

ACTIVITY 38
Time guide
3 mins

Jot down what you think are two of the main things you would have to do to control your workteam.

* _____

* _____

You could have mentioned all sorts of things ranging from the instructions you give at the beginning of a job to following up results at the end but I wonder if you thought of one particularly - telling people what to do and telling them if what they have done is not up to standard and getting them to take corrective action.

This can be difficult to do tactfully and is often difficult to take. In an extreme form we tend to see 'control' as personal criticism and we don't like it.

ACYIVITY 39
Time guide
3 mins

Think about being criticised for a moment. Nobody enjoys it but in what sort of atmosphere is it <u>easiest</u> to accept criticism? Jot down three suggestions.

* _____

* _____

* _____

Perhaps you said something like:

* in a friendly atmosphere where your work is generally appreciated

* if the criticism is fair and you have a chance to put your point of view

* where you <u>care</u> about what happens and have an interest in putting things right.

You may have mentioned other points as well but I hope we can agree that, whatever we have said, this sort of atmosphere isn't something which you can create overnight. It has to be built up over a period patiently and consistently.

So the first point about motivation is

CREATE THE RIGHT ATMOSPHERE.

ACTIVITY 40
Time guide
2 mins

Suppose your workteam's performance is not up to standard.

What is the first thing you should do before you consider corrective action?

* _____

Well, assuming that you have measured performance against a known standard, I hope we can agree that the first thing you have to do is find out <u>why</u> work is below standard.

ACTIVITY 41
Time guide
5 mins

Suppose the problem is that the workteam is working slowly. It doesn't seem to be caused by materials, equipment, layout or method but is simply the attitude of the workteam as far as you can judge.

Jot down four possible reasons why they might work unacceptably slowly.

* _____
* _____
* _____
* _____

Here are some typical causes for you to compare with your list:

Fear of losing the job - people often fear this will happen if they work too fast or are too efficient. "Don't work too fast - they'll make one of us redundant."

A way of earning more - working slowly now may create overtime later or may be a means of putting pressure on an employer in support of a wage demand.

Resentment - if the workteam resent the way they have been treated over one matter they may retaliate by failing to cooperate over something else. Perhaps the supervisor turned down a reasonable request for some time off so the workteam makes him pay for it in lost production.

Boredom very boring, repetitive jobs can result in people taking every opportunity to get away from the workplace for a few minutes.

No faith in the supervisor - if work is frequently badly planned and coordinated then the workteam lose any interest in working effectively.

Although we were thinking in terms of why people might work slowly, these causes are often behind situations at work where motivation seems to be poor and often, of course, in fairly complex combinations.

So what can you do about it?

There are no quick answers which will put right your motivating problems overnight but there are a few general principles which you can try to work to.

* Give responsibility

  Eg a cleaner draws his own materials from the stores as he needs them but has to stick to a monthly budget.

* Give meaningful jobs

  Where possible, give complete jobs or complete units to one person so he can 'get the whole picture.'

  Eg a service engineer has a whole geographical area to cope with and plan for.

* Give authority

  You may not be able to do this without management approval but you might, for instance, allow more authority over the actual hours worked in any one day so that the workteam have more job freedom.

* Introduce new and more difficult tasks

  Build on what you've got. Develop your workteam's skills by taking them on to more complex tasks which stretch them further, eg operating more complex machinery.

* Let the workteam become experts

  Develop potential in your workteam. If they show a special interest or have a special skill encourage them and allow them to develop.

  Eg an office typist shows an interest in wordprocessors and is encouraged to develop the use of computerised equipment in the office.

* Keep the workteam informed

  Make reports directly available to them so they can see how the workplace and their own performance is fairing.

* Listen to what the workteam have to say

  They are probably more involved with the job day-to-day than you are and know a lot. Listening to them may be useful to you and also demonstrates that you regard their opinion.

These points boil down to recognising the value of the workteam members as individuals and for the contribution they make to the job. Motivation is a very big subject which we haven't the scope to discuss here. If you would like to study it further you could work through some other units in this series - Needs and Rewards and Enriching Work.

EXTENSION 4
page 68

Let's think for a moment about how we can motivate the workteam to accept and contribute to the control of their output.

ACTIVITY 42
Time guide
4 mins

Look back over what we have said about ways of motivating people and jot down three things you could do to motivate the workteam to accept and contribute to output control.

* _____

* _____

* _____

You may have thought of a number of possibilities depending on your own experience. Here are mine to compare with yours.

* Encourage the workteam to control their own work.

  The extent to which you can do this depends on the experience and expertise of the workteam member concerned. But, as a general rule, it's a good thing to give the workteam clear standards and let them be responsible for making sure these standards are met.

* Involve the workteam in developing standards.

  People are much more likely to accept standards which they have had a hand in setting up and which they believe they can attain.

* Encourage two-way communication.

  Control systems work much better if there is a good two-way communication between supervisor and workteam.

  That way, you and the workteam get feedback on what is happening and, in an atmosphere where problems are freely discussed, missed standards can be dealt with as an opportunity to explore problems together rather than as a rod with which to beat the workteam.

3 Training and Development

The workteam are the most valuable resource you have. Unlike equipment, they can be developed and trained to adapt to changing demands and to new situations.

In a way, you are training and developing your workteam all the time. Each time you answer a query clearly and completely, you are adding to the workteam's knowledge and expertise.

Perhaps you also have more formal responsibilities for training as well. Whether you do the training yourself or call in a training specialist, you probably play a large part in recognising training needs and selecting people for particular training.

ACTIVITY 43
Time guide
5 mins

Jot down three situations in which, in your experience, you would think training was necessary.

* _____

* _____

* _____

The precise situation you have chosen will depend on your experience but I hope you will find that you can group them under these headings.

* Specific performance problems

  Training can be given in safety procedures if accidents seem to be on the increase. If materials seem to be being wasted, the source of the waste can be tracked down and training given in the correct method.

* New methods or equipment

  Introducing a new method or major new equipment can create as many problems to the workteam as starting an entirely new job. Training beforehand and very clear job instructions are very important here.

* Broadening skills

  If the workplace is to grow and adapt to change, you need people who can take on new jobs and respond to career opportunities when they arise.

  Seeing people's potential for development will often start with you.

How does development and training fit into your control system?

If you have clear standards then performance faults should be highlighted fairly easily. This makes it possible for you to

IDENTIFY THE TRAINING NEEDS

ACTIVITY 44
Time guide
2 mins

Can every performance fault be corrected by training? YES/NO

* _____

I hope we can agree that the answer to this is "No". A good control system will show you what is wrong but finding out the real causes takes careful, patient and tactful investigation. Training sometimes tends to be suggested as an immediate solution to poor performance but lack of training may be just one of the problems. It's no use, for instance, training a lathe operator because his productivity record is low, if the real problem is that the machine breaks down frequently.

You need to decide

* whether it is a lack of skill, knowledge or the right attitude

* whether training is needed individually or in groups

* precisely what training should be given and what it is expected to achieve

Having identified the training need, the next stage is to

PROVIDE TRAINING

You may do this yourself or call in a training expert.

ACTIVITY 45
Time guide
4 mins

Suppose you do the training yourself. What do you need to know before you can train somebody else. Jot down three suggestions.

* _____

* _____

* _____

You need to know:

* what you expect training to achieve

* how to do the job you are going to train somebody else to do

* what are the key points to put across and what are the main faults to look out for

* how to train somebody effectively.

EXTENSION 5
page 69

Once again, these topics are dealt with in greater depth in other units in this series which are about training specifically.

As with every other kind of critical control point, you need to keep simple records of what training has taken place and when so that you can monitor what is happening.

A simple form like this is probably sufficient.

NAME	PHOTOCOPIER	TELEX MACHINE	WORD PROCESSOR	TELEPHONE SWITCHBOARD
WHITE	/	/	/	/
NOLAN	/	1/11	-	1/10
SMITH	1/11	8/11	1/12-4/12	-
JONES	/	1/12	-	-
etc				

/ means the worker can already do the job.
- means he doesn't need to know the job.
1/11 etc indicates the date when the training will be provided.

All too often training ends at this stage - the training has taken place and that is the end of the problem.

ACTIVITY 46
Time guide
2 mins

In an effectively controlled workplace what should happen next?

*

You may not have used the same words as me but I hope we can agree that we need some kind of evaluation or measurement of the success of the training.

ACTIVITY 47
Time guide
2 mins

How will you know whether training have been effective?

*

Unless you are training for the remote future, you will know whether training is effective by whether it brings about an improvement in performance. You may be able to measure this by your output records or you may have to depend on your own observation of how work is being done in your work area.

Either way you are back to observing performance and comparing it with a standard - and back once more to the beginning of the control cycle.

SELF CHECK 5 Decide whether the following statements are TRUE or FALSE.
Time guide
10 mins

a) The workteam is the only resource with the potential for growth or change. TRUE/FALSE

b) Criticism is easier to take if you have no interest or involvement in the job. TRUE/FALSE

c) Motivation means whipping up the enthusiasm of the workteam. TRUE/FALSE

d) If somebody else provides formal training sessions, you have no responsibility for training and development. TRUE/FALSE

e) Not every performance problem can be solved by training. TRUE/FALSE

f) To train somebody else you just need to know how to do the job yourself. TRUE/FALSE

Complete the following statements with a suitable word or group of words.

g) You can encourage the workteam to accept and contribute to control systems if you:

encourage them to _____ their own work

involve them in _____ _____

encourage good _____

h) The stages in a controlled training cycle are:

_____ and _____ performance

identify _____ _____

provide _____

_____ training by _____ and _____

performance.

The answers to this self check are here in the following words, so you'll need to check out your answers carefully. a) This statement is true. Although equipment may be adaptable to some extent it is only the workteam which, with training, can adapt to any new development. b) This statement is true too. If you have no interest in taking corrective action and getting things right, it's easy to take criticism just as a personal insult and performance is likely to become even worse. c) This statement is false. Motivation depends upon recognising the importance and value of each member of the workteam both for themselves and for the contribution they can make to the job. Whipping up enthusiasm which cannot be sustained is likely to be very discouraging. d) This statement is false. Every supervisor has responsibilities for training and development in identifying training needs and potential for development and in evaluating the effectiveness of training. In addition to this, many of the discussions you have with the workteam about the job provide the opportunity for development. e) This is true. Failure to meet performance standards may be the result of material shortage, machine failure, illness or any number of other things. A careful identification of the real causes is very important. f) This statement is false. You also need to know precisely what the training should achieve, the key points to put across and the faults to look for and how to train somebody. g) You can encourage the workteam to accept and contribute to control systems if you: encourage them to control their own work; involve them in developing standards; encourage good communications. h) The stages in a controlled training cycle are: observe and measure performance; identify training needs; provide training; evaluate training by observing and measuring performance.

4 Summary

Effective control systems have the support and co-operation of the workteam.

The workteam must be motivated to accept and contribute to control systems by

* being encouraged to control their own work
* being involved in developing standards
* giving and getting information about performance.

Every supervisor has some responsibility for training and development.

A controlled training cycle:

* observes and measures performance
* identifies training needs
* provides training
* evaluates training by observing and measuring performance.

PART D PERFORMANCE CHECKS

1 End Check

Time guide 60 mins

You may review your understanding of the Unit as a whole by completing this group of questions. DON'T GUESS THE ANSWERS - if you are unsure, flick back into the Unit and check before responding.

If you are still unsure put a question mark against your response before proceeding.

TRUE/FALSE

Respond to each statement by writing either TRUE or FALSE in the space provided.

1 In a normal control process, corrective actions are taken only when variances are discovered. _____

2 All measurements used in control are precise calculations made with equipment like scales and automatic counters. _____

3 Actual performance can only be judged against known standards. _____

4 The best way to approach setting up control is to assume that only selected key areas deserve detailed standards and measurements and should be closely monitored. _____

5 Since performance problems are the same everywhere, the critical control points will be the same in all departments, no matter what kind of department is being considered. _____

6 Standards are set by specialists outside the operating department and the only role of the supervisor is to pass them on to the workteam. _____

7 Motivation is more effective if the supervisor works at it steadily and consistently over a period of time. _____

8 Training is useful only for teaching technical material, like how to adjust a lathe or operate a computer. _____

COMPLETION

Respond by completing each sentence with a suitable word or words.

9 The four key steps of the control process are:

1) To set performance _____

2) To collect data and measure _____

3) To compare _____ with standards

4) To take _____ action.

10 Many standards allow a defined _____ above or below the exact desired tolerance; this is called a _____.

11 The first step in taking corrective action is to find the _____ of the variance.

12 Supervisors must often develop their own _____ or supporting standards, which if met, will allow an _____ standard imposed from outside also to be met.

13 The best way to set standards is through _____ _____.

14 Unless tactfully handled, the process of taking corrective action as far as the workteam is concerned, can appear as personal _____.

15 Understanding the _____ for the workteam working below standard would be the first step in _____ them.

16 Training aims to improve the knowledge, _____ or _____ to the job of the workteam.

MULTIPLE CHOICE

Respond to each question by putting a mark against the ONE answer which is most correct.

17 Which of the following is not an example of a standard?

a) Weight of each piece will be 1.5 pounds plus or minus .025 ounce

b) Waste shall account for no more than .01% of the material processed

c) New employees might receive a 5% increase in wage rate after six months of service

d) Each assembly line will produce at least 400 units per day.

18 Which of the following documents is a source of control data?

a) An internal telephone directory

b) A time card

c) An agenda for a meeting

d) A materials parts list.

19 The control process affects planning by

a) providing much of the basic planning data

b) sometimes indicating that goals should be changed

c) setting new problems to be solved in plans

d) all of the above.

20 If the workteam fail to meet standards, it is best handled as

a) a training problem

b) a production problem which you should tackle together

c) a criticism of the individuals concerned

d) their responsibility.

21 A Gantt chart allows you to

a) set out the sequence in which all given jobs will be processed, so that the overall given target can be met

b) identify the break even point

c) set the minimum batch quantity

d) draw your technical plans.

22 A Materials Variance report

a) shows you the parts that are required to build the product

b) presents the figures as on standards set, actual results achieved and any variances for given materials

c) is a list of end of stock parts

d) is a stock taking form.

23 A measure of utilisation of floor space is

a) total number of employees

b) square foot per employee

c) output per employee

d) number of cars in the car park place.

24 A highly motivated workteam will

a) be enthusiastic about everything

b) always come up to standard

c) be involved in discussing problems and setting standards

d) consistently exceed standards.

END CHECK - Checkout

Audio Tape Side 2 Time guide 35 mins

The answers and explanations for these End Checks are on Side 2 of our Audio Tape. Have your responses with you as you play this tape. As you listen you can check out how well you have done and make notes as you proceed.

2 Tutor Check

Time guide 60 mins

Read th following case incident and then deal with the accompanying questions.

For five years Mary Wilson had been a supervisor in charge of the typing pool of a large mail order company. She was thoroughly familiar with every aspect of work in her work area, and well liked by both her workteam and her boss. However, in a recent survey done by outside consultants, her department was criticized heavily. The conclusion was that Mary had become sloppy about overtime, use of operating supplies (ie paper, stationery, blank documents etc) and misuse of telephone and copying machine. Consequently Mary was issued a budget for these items at the beginning of the next month.

You only need write ONE or TWO sentences against each question.

1) Describe how Mary needs to apply the four stages of the control process to her department.

2) Mary would have to develop some standards of her own to meet the overall budgeted target. Describe how she might do this for one item (paper or stationery for example).

3) Design a document that would enable Mary to measure the performance with respect to its set standard for one activity in her department.

4) If one or two of her workteam were inefficient and sloppy, what else could Mary do to improve their performance?

Send to Tutor

Now get your answers to your study tutor either by post or handing it over personally. You will receive your tutor's assessment and comment back through the post as soon as can be managed.

3 Work Based Project

Time guide 60 mins

As a supervisor you are responsible for some aspects of the activities in your workplace.

1) What would be the critical control points for those activities that you are responsible for?

2) Select any one of these critical control points and show

   a) what performance standards have been set for it

   b) what data is collected to measure the performance

   c) what document(s) you use to compare actual results with the standard

   d) how you establish the causes of any variances before any corrective action is taken.

3) Describe how you think proper motivation and training of the workteam could improve the present performance levels.

Send to Tutor

Now get your answers to your study tutor either by post or handing it over personally. You will receive your tutor's assessment and comment back through the post as soon as can be managed.

PART E UNIT REVIEW

1 Return to Objectives

Now that you have completed your work on this unit, let's review each of the four unit objectives. I'll repeat them and add some comments.

You should be better able to:

* **APPLY THE 'CONTROL PROCESS' TO ANY WORK SITUATION**

We have seen that we apply the control process automatically when we are driving a car or riding a bicycle and have a clear idea of what we want to reach. The same control process can be applied to any work situation, provided we define and apply each of its stages formally. We identified them as setting your performance standards and taking corrective action. Looked on in this way, practically any area of activity, whether it is related to manufacturing, office work or general services, can be controlled effectively. Seeing your own problems in this light will considerably improve your effectiveness as a supervisor.

You should be better able to:

* **IDENTIFY THE KEY AREAS OF CONTROL IN YOUR WORK AREA**

We have mentioned that to all supervisors the crucial question is what to control, as far as their own responsibilities and their own work area are concerned. You have to be selective and concentrate on those critical areas which you regard as crucial for achieving the goals of your workplace. We have seen that they relate usually to the 'customer service' aspects namely delivery times, costs, quality of service etc, or to the 'resource productivity' aspects such as utilisation of the workteam equipment, materials and so on. Critical control points are those which most affect whether or not you can achieve your goals. I hope that our discussion on this topic will encourage you to critically examine your control points and see if you need to make any changes to improve your output control.

You should be better able to:

* **USE SOME BASIC TECHNIQUES FOR CONTROLLING OUTPUT**

We have examined several basic techniques associated with the control process and I hope that they have given you some food for thought. In particular I hope you will be able to develop clear standards that are concrete, measurable and above all achievable by your workteam. We have also examined the different approaches you can take in measuring the actual results and comparing them with the standards. The wide range of examples taken from production/operations, materials, quality, plant maintenance activities and so on will, I hope, have stimulated you to develop your own measures of collecting data and monitoring performance in your area of responsibility. By designing your own appropriate documents you will be in a strong position to identify the causes of any variances, and thus take corrective actions very effectively and speedily. Although everybody's job is different, the same techniques for setting standards, measuring and monitoring output are applicable in each situation.

You should be better able to:

* **RECOGNISE THE IMPORTANCE OF INCLUDING THE WORKTEAM IN YOUR CONTROL SYSTEMS**

We saw that the success of output control systems can depend heavily on the workteam. In particular we concentrated on two issues. First, in creating the right climate for the workteam to achieve high output and second in planning and providing adequate training so that they can achieve the performance levels necessary. It's important to understand why people tend to work below standard and how you as a supervisor can enrich their jobs. Maintaining good two way communications between yourself and your workteam is also crucial. But above all identifying the training needs of your workteam, giving them the training they need and evaluating their performance after their training play a vital part in controlling your output. Remember, as a supervisor, you can only achieve results through the workteam and it is by their performance that your own will be measured.

I hope the work you have done on this unit was enjoyable and useful enough to encourage you to continue with your studies.

2 Extensions

I recommend that you take up as many of these extensions as you can. They will further increase your understanding and interest. You will also be able to check out a number of the ideas that I mention in the unit. The extra time and effort will prove very worthwhile.

EXTENSION 1 Other units in this series which would help you to feel more confident and understanding about your own role as leader of your workteam are as follows:

Book: The Choice Series Unit No 11: Needs and Rewards

Author: R Ellingham

Publisher: Northern Regional Management Centre

Book: The Choice Series Unit No 14: Team Leading

Author: W Tait

Publisher: Northern Regional Management Centre

EXTENSION 2 Book: The Choice Series Unit No 33: Method Study

Author: R Twitty

Publication: Northern Regional Management Centre

EXTENSION 3 Book: Supervisory Studies 4th Edition

Author: P W Betts

Publisher: Macdonald & Evans

A practical examination of a wide range of supervisory management topics. It contains an in-depth use of a number of useful techniques.

EXTENSION 4 If you want to know about how to motivate your workteam and make their work more fulfilling, these units should help.

Book: The Choice Series Unit No 11: Needs and Rewards

Author: R Ellingham

Publisher: Northern Regional Management Centre

Book: The Choice Series Unit No 12: Enriching Work

Author: R Ellingham

Publisher: Northern Regional Management Centre

EXTENSION 5 If you are responsible for the formal training of your workteam you will find these units will help you plan and run your training programmes.

Book: The Choice Series Unit No 80: Training Plans

Author: R Holden

Publisher: Northern Regional Management Centre

Book: The Choice Series Unit No 81: Training Sessions

Author: R Holden

Publisher: Northern Regional Management Centre

EXTENSION 6 Book: The Choice Series Unit No 20: Taking Decisions

Author: W Tait

Publisher: Northern Regional Management Centre

These extension opportunities can all be taken up via your Support Centre.

They will either have the materials or will arrange that you have access to the materials. However it may be more convenient to check out the materials with your Personnel or Training people at work - they may well give you access. There are other good reasons for approaching your own people, for example they will become aware of your interest and you can involve them in your development.

3 References

REFERENCE 1 Book: What every supervisory should know

Author: Lester R Bittel

Publisher: McGraw Hill, New York, 5th Edition, 1985

These references can all be taken up via your Support Centre. They will either have the materials or will arrange that you have access to the materials. However it may be more convenient to check out the materials with your Personnel or Training people at work - they may well give you access. There are other good reasons for approaching your own people, for example they will become more aware of your interest and you can involve them in your development.

If you do wish to make use of these references then don't think that you must read them right through. Just dip into them for a slightly wider treatment of the topic raised by the unit.

I should warn that the language and style of the writing is often difficult to cope with. So don't struggle with it too much. Do what I do when in difficulty, put the book back on the shelf and find a better one!

THE CHOICE SERIES

PRINCIPLES AND PRACTICE OF SUPERVISION

11 Needs and Rewards
12 Enriching Work
13 Workteams
14 Team Leading
15 Leading Change
16 Organisation Systems
17 Supervising in the System
18 Supervising with Authority
19 Workplace Control
20 Taking Decisions

TECHNICAL ASPECTS OF SUPERVISION

30 Looking at Figures
32 Using Graphs
33 Method Study
34 Easy Statistics
35 Quality Control
37 Controlling Output
38 Value Analysis
39 Quality Circles
40 Computers
41 Stores Control
42 Managing Time
43 Descriptive Statistics
45 Supervisors & Marketing

COMMUNICATION

60 Communicating
61 Speaking Skills
62 Writing Skills
63 Communication Systems
64 Orders and Instructions

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70 Accounting for Money
71 Control via Budgets
72 Cost Reduction
73 Wage Payment Systems
74 The National Economy

INDUSTRIAL RELATIONS

80 Training Plans
81 Training Sessions
82 Discipline and the Law
84 Health and Safety
85 Industrial Relations in Action
86 Equality at Work
87 Hiring People
88 Supervising and the Law